

# ENTOMOLOGICAL NEWS

---

VOL. LXXVI

JUNE, 1965

No. 6

---

## An Annotated List of the Trichoptera of Minnesota, with Description of a New Species

DAVID A. ETNIER, Department of Zoology, University of Minnesota, Minneapolis

Although new species of Trichoptera will be discovered in North America for many years to come, the distribution, life history, and ecology of many already described species is so poorly known that work on the evolution of the order and its role in local and regional aquatic communities is difficult. It is hoped that the following list will be of use to those interested in these aspects of trichopteran biology.

Of the 208 species listed, 90 represent new state records. Fifty of these are the result of the work of Dr. Donald G. Denning while a graduate student at the University of Minnesota, and 39 of the remaining 40 are a part of the many records gathered by the author.

Many descriptions of larvae are to be found in Ross, 1944. Additional information pertinent to the identification of larvae is available for the families Rhyacophilidae (Flint, 1962), Phryganeidae (Wiggins, 1960), and Linnephilidae (Flint, 1960). Ross (1946, 1956) presents detailed treatment of the adults of the families Lepidostomatidae and Rhyacophilidae, respectively.

Work on this paper was initiated at the University of Minnesota Biology station at Itasca State Park, with support from the National Science Foundation during 1963 and 1964. The author extends special appreciation to the many people who have provided collections. The University of Minnesota Department of Entomology has been most helpful in making available their

collection. Thanks also to Dr. Glenn B. Wiggins of the Royal Ontario Museum, Toronto, and Dr. Herbert H. Ross and his staff at the Illinois Natural History Survey for identification and confirmation of identifications. The assistance and encouragement of Dr. Edwin F. Cook, University of Minnesota Department of Entomology, was most helpful.

***Oxyethira bernerii* n. sp.**

This species differs from other members of the genus in the anchor-like appearance of the claspers in ventral view.

Male.—Length 2.5 mm. Color and general structure typical for genus. Seventh sternite with a median spine on the apical margin. Eighth segment lacking projections, broadly cleft ventrally, and setose. Ninth segment retracted within seventh and eighth segments, with a dense cluster of about 20 setae appearing near the posterior ventral margin, and extending to about the middle of the median arm of the claspers. Claspers fused, appearing anchor-shaped in ventral view (Fig. 1, CL). In lateral view the mesal arm of the claspers is curved dorsally. Immediately dorsal to the claspers is a moderately sclerotized, tri-lobed structure, each of the lobes bearing a terminal seta. Paired sclerotized processes that appear to be the tergites of the tenth segment (Fig. 1, 10) extend from the dorsum of the ninth segment. These structures are furcate in lateral view, and terminally expanded in ventral view. Ventral to these is a pair of membranous lobes, each of the lobes bearing a terminal seta.

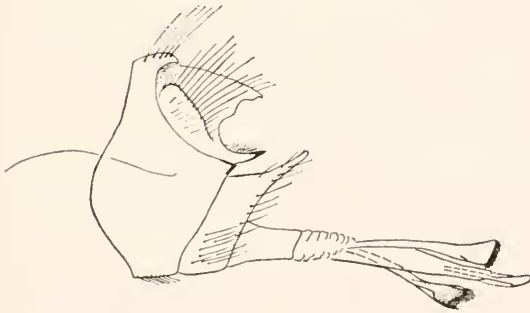
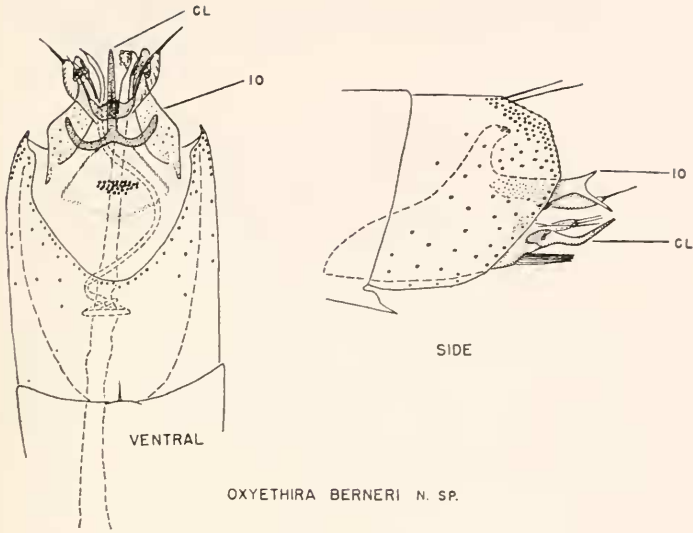
The aedeagus is straight, with a delicate membranous expansion at the tip. The spiral process makes two complete revolutions around the aedeagus, is pointed terminally, and extends slightly past the tip of the aedeagus.

Female.—Unknown.

Holotype, male.—Finland, Lake County, Minnesota, about July 27, 1964. Henry Hesse.

Paratypes.—Minnesota.—Same data as for holotype, 12 males.

The holotype and two paratypes are deposited in the collection at the University of Minnesota. Paratypes have been sent



L. QUERIS

FIG. 1. *Oxyethira berneri* n. sp., ventral and side views of male genitalia. CL, claspers; 10, tenth tergite. *Limnephilus quaeris* (Milne), side view of male genitalia.

to the Illinois Natural History Survey, R. L. Blickle, Durham, New Hampshire, and Glenn B. Wiggins, Royal Ontario Museum, Toronto. Four paratypes have been retained by the author.

In the following list an asterisk (\*) indicates a new state record. Species not illustrated in Ross (1944) are followed by a reference to a recent illustration. The author has chosen to follow the family and generic interpretation given by Ross (1944) unless otherwise indicated. Genera and species within families are arranged alphabetically. For species occurring in general throughout the state, no records are cited; those restricted to certain portions of the state are so listed, while exact locations are given for infrequently collected species. All records, unless otherwise indicated, are based on identification of adult males by the author. No data on abundance or date of collection are given, but these are available from the author on request.

#### Rhyacophilidae

**Rhyacophila fuscula** (Walker). Northeast.

#### Glossosomatidae

(Subfamily in Rhyacophilidae, Ross, 1944)

**Agapetus rossi** Denning. St. Louis and Lake counties. Denning, 1941a.

**Glossosoma intermedium** (Klapálek).

**G. nigrrior** Banks. Temperance River and Saganaga Falls, Cook county. Denning, 1942 (as *Eomystra unica*).

\***Protophila erotica** Ross. Anoka county.

\***P. maculata** (Hagen). Anoka county.

**P. talola** Denning. Pine county. Denning, 1947c. This species is very similar to and may be conspecific with the preceding species.

\***P. tenebrosa** (Walker). Anoka and Hubbard counties.

#### Philopotamidae

**Chimarra aterrima** Hagen. Northeast.

**C. feria** Ross. Northeast.

- C. obscura* (Walker). East.  
 \**C. socia* Hagen. East and Pennington county.  
*Sortosa distincta* (Walker). Northeast. (*Trentonius distinctus* in Ross, 1944.)

## Psychomyiidae

- Cyrnellus marginalis* (Banks). Wabasha county.  
*Neureclipsis bimaculatus* (Linnaeus).  
 \**N. crepuscularis* (Walker). Eastern half.  
 \**N. validus* (Walker). Lake of the Woods and Cook counties.  
*Nyctiophylax vestitus* (Hagen).  
*Phylocentropus placidus* (Banks).  
 \**Polycentropus albipunctus* (Banks). Aitkin, Clearwater, and Lake counties. Ross, 1938b.  
*P. aureolus* (Banks).  
 \**P. centralis* Banks. Finland, Lake county.  
*P. cinereus* Hagen.  
 \**P. clinei* (Milne). Lake Saganaga, Cook county. Denning, 1956.  
 \**P. confusus* Hagen. Northeast.  
 \**P. crassicornis* Walker. North.  
 \**P. flavus* (Banks).  
 \**P. interruptus* (Banks).  
 \**P. pentus* Ross. Cook and Lake counties.  
*P. remotus* Banks.  
 \**Psychomyia flavida* Hagen.

## Hydropsychidae

- Cheumatopsyche analis* (Banks).  
*C. aphantha* Ross. South  
*C. campyla* Ross.  
*C. gracilis* (Banks). Northeast and Traverse county. Ross, 1938b.  
*C. lasia* Ross. West.  
*C. minuscula* (Banks). Northeast.  
*C. oxa* Ross.  
*C. pasella* Ross. Denning (1943) reported this species from Minnesota on the basis of a male from Houston county. The specimen has been reidentified as *C. campyla* by the author.  
*C. sordida* (Hagen). Northern half.  
*C. speciosa* (Banks).

- C. wabasha** Denning. The only state record is from the type locality, Wabasha, Wabasha county. Denning, 1947c.
- Hydropsyche betteni** Ross.
- H. bidens** Ross. Southern half.
- H. bifida** Banks.
- H. bronta** Ross.
- H. californica** Banks. Virginia, St. Louis county. Ross, 1938b.
- \***H. dicantha** Ross. Northeast.
- H. hageni** Banks. Denning (1943) reported this species on the basis of a female from Anoka county. Males have not been collected.
- H. morosa** Hagen. North and east.
- H. orris** Ross. Southeast.
- H. phalerata** Hagen. East.
- H. placoda** Ross.
- H. recurvata** Banks.
- H. riola** Denning. Southeast and Polk county. Denning, 1942.
- H. scalaris** Hagen. East.
- H. separata** Banks. Hallock, Kittson county. Denning, 1943.
- H. simulans** Ross. East.
- H. slossonae** Banks.
- H. sparna** Ross. North and east.
- H. valanis** Ross. Ross (1944) reported this species from southern Minnesota. Specimens were not seen by the author.
- H. vexa** Ross. Morrison and Hennepin counties.
- \***H. walkeri** Betten & Mosely. Cotton, St. Louis county.
- Macronemum zebratum** (Hagen). North and east.
- \***Parapsyche** sp. A larva of this genus was discovered in a March 27 collection from East St. Paul, Ramsey county. Two species, *apicalis* and *cardis*, are known from eastern United States.
- Potamyia flava** (Hagen).

#### Hydroptilidae

- Agraylea multipunctata** Curtis.
- Hydroptila ajax** Ross. Denning (1947a) reported this species from Washington county. Specimens were not seen by the author.
- H. albicornis** Hagen. North.
- H. amoena** Ross. Ramsey and Cook counties.
- H. armata** Ross. Washington county.
- \***H. berneri** Ross. Finland, Lake county. Ross, 1941b.

- H. consimilis* Morton. Lake, Polk, and Ramsey counties.  
*H. grandiosa* Ross. Anoka county. Specimens were not seen by the author.  
*H. hamata* Morton. Chisago, Lake, and Washington counties.  
\**H. jackmanni* Blickle. Trout Creek, Winona county. Blickle, 1963. Identification by J. Unzicker, Illinois Natural History Survey.  
*H. perdita* Morton. Ramsey and Carlton counties.  
\**H. salmo* Ross. Lake Saganaga, Cook country. Ross, 1941b.  
\**H. scolops* Ross. Montevideo, Chippewa county.  
*H. spatulata* Morton. Ramsey and Cass counties.  
\**H. strepha* Ross. Cook and Crow Wing counties. Ross, 1941b. Identification by J. Unzicker, Illinois Natural History Survey.  
*H. valhalla* Denning. Our only Minnesota record is from the type locality, Taylors Falls, Chisago county. Denning, 1947a.  
\**H. virgata* Ross. This entry is based on females from Trout Creek, Winona county, that were identified at the Illinois Natural History Survey.  
*H. waubesiana* Betten.  
*Ithytrichia clavata* Morton. North.  
*Leucotrichia pictipes* (Banks). East.  
*Mayatrichia ayama* Mosely. East.  
\**Neotrichia halia* Denning. Finland, Lake county. Denning, 1947b.  
\**N. okopa* Ross. Finland, Lake county.  
\**N. vibrans* Ross. Cloquet, Carlton county. Identification by J. Unzicker, Illinois Natural History Survey.  
\**Ochrotrichia tarsalis* (Hagen). Finland, Lake county.  
*Orthotrichia americana* Banks. Ramsey and Clearwater counties.  
*O. baldufi* Kingsolver & Ross. North. Kingsolver and Ross, 1961.  
*O. cristata* Morton. Ramsey, Cass, and St. Louis counties.  
\**Oxyethira araya* Ross. Sandy Lake, Aitkin county. Ross, 1941a.  
\**O. bernerii* Etnier. Finland, Lake county. See illustration in this paper.  
\**O. coercens* Morton. Washburn Lake, Cass county.  
\**O. michiganensis* Mosely. Finland, Lake county. Blickle and Morse, 1954. Identification by J. Unzicker, Illinois Natural History Survey.  
*O. obtatus* Denning. Ramsey, Anoka, and Clearwater counties.

- \**O. pallida* (Banks). Moore Lake, Anoka county.
- \**O. rivicola* Blickle & Morse. St. Louis and Lake counties. Blickle and Morse, 1954.
- O. serrata* Ross.
- \**O. sida* Blickle & Morse. Crow Wing and Lake counties. Blickle and Morse, 1954.
- \**Stactobiella delira* (Ross). Cook and Lake counties. *Tas-cobia delira* in Ross, 1944.

## Phyrganeidae

- \**Agrypnia glacialis* Hagen. Northwest. Usinger, 1956.
- \**A. improba* (Hagen). North. Milne, 1931.
- \**A. macdunnoughi* (Milne). Lake Itasca, Clearwater county. Milne, 1931.
- A. straminea* Hagen.
- \**A. vestita* (Walker).
- \**Banksiola canadensis* (Banks). North. Leonard and Leonard, 1949.
- B. crotchi* Banks. *B. selina* in Ross, 1944.
- \**B. smithi* (Banks). Lake Itasca, Clearwater county. Banks, 1914.
- Fabria inornata* (Banks).
- Phryganea cinera* Walker.
- \**Ptilostomis ocellifera* (Walker).
- \**P. semifasciata* (Say).

## Linnephilidae

- \**Astenophylax argus* (Harris). Clearwater, Cook, and Lake counties. Betten, 1934.
- \**Drusinus uniformis* Betten. Houston county.
- Frenesia missa* (Milne). Hennepin and Wabasha counties.
- Glyphotaelius hostilis* Hagen. North.
- Grammotaulius interrogationis* (Zetterstedt). Cook county. Denning, 1941b.
- Hesperophylax designatus* (Walker). East.
- Leptophylax gracilis* Banks.
- Limnephilus acrocurvus* Denning. Our only Minnesota record is from the type locality, Gull Lake, Crow Wing county. Denning, 1942.
- L. bimaculatus* Walker.
- L. canadensis* Banks. North. Denning, 1941a.
- L. consocius* Walker.
- \**L. curtus* (Banks). North. Ross, 1950.



- \**L. externus* Hagen. Pupal exuviae of this species from Mille Lacs Lake were deposited in the University of Minnesota collection by Dr. Donald G. Denning. The vial contained a reference to the pinned adults in the same collection, but these specimens could not be found. Ross, 1938b.
- \**L. hyalinus* Hagen.
- \**L. indivisus* Walker. Wabasha, Clearwater, and St. Louis counties.
- \**L. infernalis* (Banks). Clearwater, Cook, and St. Louis counties. Banks, 1914.
- \**L. janus* Ross. North. Ross, 1938b.
- \**L. moestus* Banks. North and Ramsey county.
- \**L. mutatus* (Hagen). Clearwater county. Ross, 1938b.
- \**L. ornatus* Banks. Northwest and Ramsey county.
- \**L. ozburni* (Milne). North. Leonard and Leonard, 1949.
- \**L. partitus* Walker. St. Louis and Lake counties. Betten and Mosely, 1940.
- \**L. parvulus* (Banks). Lake Itasca, Clearwater county. Ross, 1938b.
- \**L. perpusillus* Walker. Crookston, Polk county. Betten and Mosely, 1940.
- \**L. quaeris* (Milne). Crookston, Polk county. The illustration (Fig. 1) of the lateral view of the male genitalia was made from a Minnesota specimen collected by Dr. Denning and identified by Dr. Lorus J. Milne in 1938.
- L. rhombicus* (Linnaeus).
- \**L. rossi* Leonard & Leonard. This species has been reared by George Swanson, U. S. Fish & Wildlife Service, from Valley Creek, Washington county. Identification was made by Dr. Glenn B. Wiggins. Leonard and Leonard, 1949.
- \**L. secludens* Banks. Ross, 1938b.
- L. sericeus* (Say). North.
- L. sordidus* (Hagen). Northwest.
- L. submonilifer* Walker. East.
- \**L. tarsalis* (Banks). Baudette, Lake of the Woods county. Ross, 1938b.
- Neophylax concinnus* McLachlan. *N. autumnus* in Ross, 1944. Cass, Clearwater, and Washington counties.
- N. fuscus* Banks. Scott county.
- N. oligius* Ross. Northeast. Ross, 1938a.
- Platycentropus indistinctus* (Walker). Denning (1937) illustrated the larva of this species from the Partridge River near Aldrich, Wadena county. Betten and Mosely, 1940. No specimens were seen by the author.

- \**P. plectrus* Ross. Ross, 1938a.
- P. radiatus* (Say). North.
- Pycnopsyche guttifer* (Walker). North and Olmsted county.
- \**P. lepida* (Hagen). North.
- P. subfasciata* (Say).
- \**Radema incerta* (Banks). Northeast. Ross, 1938b.

## Molannidae

- Molanna flavicornis* Banks.
- M. uniophila* Vorhies.

## Leptoceridae

- Athripsodes alagmus* Ross.
- \**A. ancylus* (Vorhies).
- A. angustus* (Banks). North.
- A. arielles* Denning. Our only Minnesota record is from the type locality, Coon Creek, Anoka county. Denning, 1942.
- A. cancellatus* (Betten).
- A. dilutus* (Hagen). North.
- A. flavus* (Banks). Ross (1944) reported larvae considered to be this species from Minnesota. No adults have been taken.
- \**A. mentieus* (Walker). Cotton, St. Louis county.
- A. miscus* Ross. Known in Minnesota only from the type locality, Lake Itasca, Clearwater county. Ross, 1941b.
- \**A. nephus* Ross. One male from Lake Itasca, Clearwater county, was tentatively identified as this species by T. Yamamoto of the Illinois Natural History Survey. The specimen was destroyed in mailing.
- A. resurgens* (Walker).
- A. tarsi-punctatus* (Vorhies).
- A. transversus* (Hagen).
- \**Leptocella albida* (Walker).
- \**L. candida* (Hagen). Lake Itasca, Clearwater county.
- \**L. diarina* Ross. Larvae that are apparently of this species have been collected in small streams in Becker and Goodhue counties. An adult male was taken in a light trap at Cotton, St. Louis county.
- L. exquisita* (Walker).
- \**L. pavidata* (Hagen). Northeast.
- Leptocerus americanus* (Banks).
- Mystacides longicornis* (Linnaeus).
- M. sepulchralis* (Walker).

- Oecetis avara* (Banks).  
*O. cinerascens* (Hagen).  
\**O. immobilis* (Hagen).  
*O. inconspicua* (Walker).  
*O. ochracea* (Curtis).  
*O. osteni* Milne.  
\**O. persimilis* (Banks). Lake and Cook counties.  
\**Setodes guttatus* (Banks). Two females from Cass Lake, Cass county, have been tentatively identified as this species. Banks, 1907.  
\**S. incerta* (Walker). Cotton, St. Louis county.  
\**Trienodes aba* Milne.  
*T. borealis* Banks. Unassociated female described from Minnesota. Banks, 1900.  
\**T. dipsia* Ross. Lake Saganaga, Cook county.  
\**T. flavescens* Banks. Northwest.  
\**T. grisea* Banks. Western half.  
\**T. injusta* (Hagen).  
\**T. marginata* Sibley. North.  
\**T. nox* Ross. Ramsey, Clearwater, and Crow Wing counties. Ross, 1941b.  
*T. tarda* Milne.

## Goeridae

- \**Goera calcarata* Banks. A larva from Coon Creek, Anoka county, was tentatively identified as this species. Ross, 1947.

## Lepidostomatidae

- \**Lepidostoma bryanti* (Banks). Cook and Clearwater counties. Leonard and Leonard, 1949. Betten, 1934.  
\**L. costalis* (Banks). Pine Lake, Cook county. Ross, 1946.  
\**L. togatum* (Hagen). North. Betten, 1934.  
*L. unicolor* (Banks). Ross, 1946. Specimens were not seen by the author.

## Brachycentridae

- Brachycentrus fuliginosus* Walker. Denning (1937) illustrated larvae of this species from Nine-mile Creek, Hennepin county. Leonard and Leonard, 1949.  
\**B. numerosus* (Say). St. Francis River, Sherburne county.  
\**B. occidentalis*. Hennepin county. Ross, 1938b.  
*Micrasema rusticum* (Hagen). North and central.  
*M. wataga* Ross. Northeast.

## Helicopsychidae

*Helicopsyche borealis* (Hagen).

## LITERATURE CITED

- BANKS, NATHAN. 1900. *Trans. Am. Ent. Soc.* 26: 239-259.  
 —. 1907. *Proc. Wash. Ent. Soc.* 8: 117-133.  
 —. 1914. *Can. Ent.* 46: 149-156, 201-205, 252-258, 261-268.  
 BETTEN, CORNELIUS. 1934. *N. Y. State Mus. Bull.* 292. 576 p.  
 BETTEN, CORNELIUS, and MARTIN E. MOSELY. 1940. *The Francis Walker types of Trichoptera in the British Museum.* Bartholomew Press, Dorking, England. 248 p.  
 BLICKLE, R. L. 1963. *Bull. Brook. Ent. Soc.* 58: 17-22.  
 BLICKLE, R. L., and W. J. MORSE. 1954. *Bull. Brook. Ent. Soc.* 49: 121-127.  
 DENNING, DONALD G. 1937. *Trans. Am. Ent. Soc.* 63: 17-44.  
 —. 1941a. *Ann. Ent. Soc. Am.* 34: 195-203.  
 —. 1941b. *Can. Ent.* 73: 232-235.  
 —. 1942. *Can. Ent.* 74: 46-51.  
 —. 1943. *Ent. Am.* 23: 101-171.  
 —. 1947a. *Psyche* 54: 170-177.  
 —. 1947b. *Bull. Brook. Ent. Soc.* 42: 145-155.  
 —. 1947c. *Ent. News* 58: 249-257.  
 —. 1956. *Pan-Pacific Ent.* 32: 73-80.  
 FLINT, OLIVER S., JR. 1960. *Ent. Am.* 40: 1-120.  
 —. 1962. *Proc. U. S. Nat. Mus.* 113: 465-493.  
 KINGSOLVER, J. M. and HERBERT H. ROSS. 1961. *Trans. Ill. Acad. Sci.* 54: 28-33.  
 LEONARD, JUSTIN W., and FANNIE A. LEONARD. 1949. *Occ. Pap. Mus. Zool. Mich.* 520. 17 p.  
 MILNE, LORUS J. 1931. *Can. Ent.* 63: 228-232.  
 ROSS, HERBERT H. 1938a. *Bull. Ill. Nat. Hist. Surv.* 21: 101-183.  
 —. 1938b. *Psyche* 45: 1-61.  
 —. 1941a. *Can. Ent.* 73: 15-19.  
 —. 1941b. *Trans. Am. Ent. Soc.* 67: 35-126.  
 —. 1944. *Bull. Ill. Nat. Hist. Surv.* 23: 1-326.  
 —. 1946. *Ann. Ent. Soc. Am.* 39: 265-291.  
 —. 1947. *Trans. Am. Ent. Soc.* 73: 125-168.  
 —. 1950. *Am. Midland Naturalist* 43: 410-429.  
 —. 1956. *Evolution and classification of the mountain caddisflies.* University of Illinois Press, Urbana. 213 p.  
 USINGER, ROBERT L. 1956. *Aquatic insects of California.* University of California Press, Berkeley and Los Angeles. 508 p.  
 WIGGINS, GLENN B. 1960. *Can. J. Zool.* 38: 1153-1170.